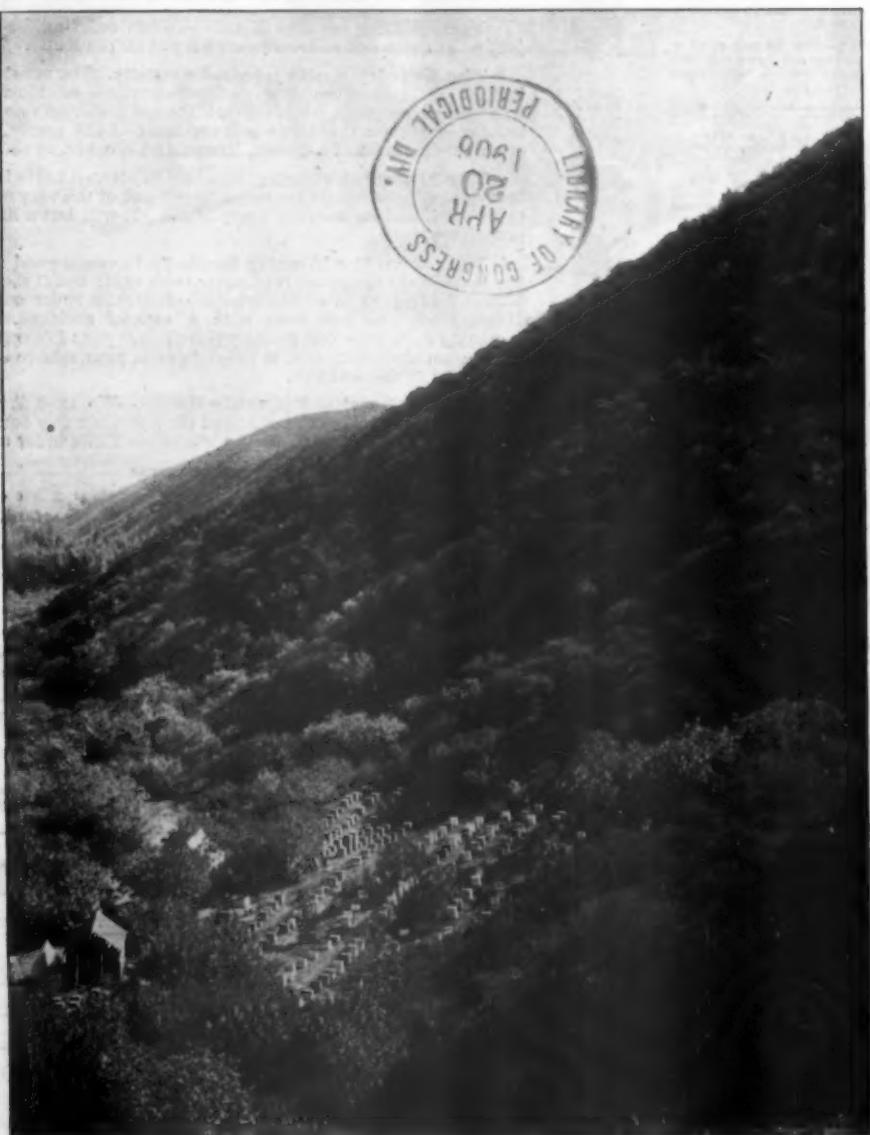


# AMERICAN BEE JOURNAL

46th Year

CHICAGO, ILL., APRIL 19, 1906

No. 16



Apiary of Schaffner Bros., near Los Angeles, Calif.

(Formerly owned by the late John H. Martin, well known to many bee-keepers as "Rambler.")





PUBLISHED WEEKLY BY  
**GEORGE W. YORK & COMPANY**  
334 Dearborn Street, Chicago, Ill.

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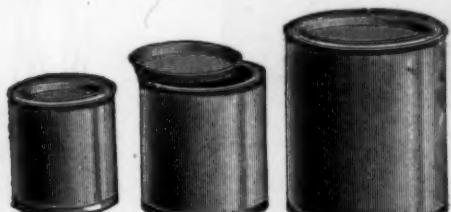
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### The Experience of Two Bee-Keepers

#### CHAPTER I

THE A. I. Root Co., Medina.

MINNETONKA, MINN., March 28, 1906.

Gentlemen:—I am writing you in regard to some goods I bought of your agent, Mr. J. C. Acklin, 1024 Miss. St., St. Paul. I purchased five Danzenbaker hives with full sheets of foundation in brood-chamber and super. I will say this much for Root's Goods: I never saw nicer or cleaner stock, no cracked or broken pieces, and everything fitted to perfection. Everything full count, including nails, etc.

#### CHAPTER II.

To-day I was over to a neighbor's helping him assemble some newly purchased hives made by a firm in ——. I was tempted to ask him why he didn't get Root's Goods. I wish you could have seen the difference. When I went there he had not uncrated them. I said to him, "Have you got all you need?" He said, "Oh, yes." Well, we found out differently. They had sent only half enough foundation, no small tacks for fastening wire, and not half enough nails, and sixteen top-bars short. I guess we said something to ourselves about that shipping clerk.

WM. V. DOBSON.

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# AMERICAN BEE JOURNAL.

ESTABLISHED IN 1861 OLDEST BEE-PAPER IN AMERICA

DEVOTED EXCLUSIVELY TO THE INTERESTS OF HONEY-PRODUCERS.

(Entered at the Post-Office at Chicago as Second-Class Mail-Matter.)

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GEORGE W. YORK, Editor

CHICAGO, ILL., APRIL 19, 1906

Vol. XLVI—No. 16



## Editorial Notes and Comments

### Apiarian Experiments in Canada

Prof. H. R. Rowsome, Lecturer in Apiculture, Ontario Agricultural College, in his reports gives an account of three experiments, none of which was a howling success:

#### SIMMINS' PLAN FOR PREVENTION OF SWARMING,

which consists in keeping constantly unfinished combs between the brood-nest and the entrance, was tried with 5 colonies. All 5 swarmed, although there was partial excuse in the fact that it was a bad season for swarming. In speaking of the plan, Prof. Rowsome says:

The inference is that a colony (the queen being young) will not swarm when the parent colony can not be easily protected against robbing, and a colony can not be easily defended when there is a large empty space at the entrance of a hive, as is the case when the first 4 or 5 frames contain starters merely and not combs.

Is this not a new theory?

#### THE TOWNSEND SUPER-PLAN,

having both sections and extracting-combs in the same super, was tried with separators over 3 hives, and without separators over 3 others:

The honey-flow was extremely good. Where there were no separators some sections were not touched at all, the sections and combs on either side of them being built out into these sections. Those sections that were built out unduly were apparently nearly  $2\frac{1}{2}$  inches thick in the middle, and were badly filled at the edges. The bees were very slow in working on the sections, doing so only when they had filled the extracting combs.

#### PAINTING TRAVEL-STAINED SECTIONS.

With regard to these, Prof. Rowsome reports:

I had hopes that a very thin coating of wax applied to the surface of dirty comb honey would improve its appearance. I tried painting hot wax with a varnish-brush upon comb honey, but the wax, instead of leaving an equal coat upon all the indentations of the cappings filled up the hollows and left a smooth surface, which also looked messy and more unmarketable, but it certainly did cover up the travel-stains.

#### Queenless Colonies in Spring

If you are a beginner, anxious to increase the number of your colonies, you will be distressed to find that one or more are queenless. Perhaps you may find one of your very best colonies contains no brood at the opening of spring, when all other colonies contain brood, and after watching and waiting in vain for any appearance of eggs or brood, the unwelcome truth is finally forced in upon you that the colony is hopelessly queenless.

It is a moral certainty that to such a colony you will give a frame of brood from some other colony, so that the

queenless bees may rear therefrom a queen. Left to your own experience, it will take years for you to learn any better, if indeed you ever learn better. But if you trust to the experience of others, you will not fool away time trying to have that colony rear a queen. It may do later in the season, but not in spring. Of course you can keep up the strength of the colony by giving it brood from time to time; but that's robbing Peter to pay Paul. The loss of brood will do more harm to the other colonies than the gain to the unfortunate. At so early a time the chances of success in rearing a queen are not the most brilliant. The attempt to rear a queen from the first brood given may be an utter failure; a queen may be reared only to disappear in some mysterious way; and if you are as successful as to get a young queen to laying, it will be only to find later on that she is practically worthless. A good queen may be reared early in spring; but a good queen rarely is reared in spring.

If you are wise, the first hard work you do when you find a colony queenless in spring is remorselessly to break up the colony and distribute its parts to other colonies. The words "hard work" are used advisedly, for it is hard work for the beginner to reduce by one the number of his colonies; but it is the profitable thing to do. He may have one less colony; but he will have more bees; and at the close of the season more colonies.

Don't fool with a queenless colony in spring; break it up.

#### The Sting-Trowel Theory

After slumbering more or less quietly for a few years, the romantic tale that the bees drop into each cell of honey a small drop of poison from the sting before sealing up the cell, using the sting as a trowel to work the wax, seems to have started anew its round of the public press. To any who have sent in clippings of the kind, possibly wondering what foundation there may be for the yarn, it may be said that it is all a work of imagination, its originator apparently seeming to think it true, but never offering a particle of proof. Of course, none of the papers that give it currency will bother themselves with a contradiction, and the only thing that can be done is patiently to allow it to run its course and die out, only to be resurrected 7 years later by some penny-a-liner who has nothing else sensational on hand.

#### Wouldn't Call an Italian-Black a Hybrid

We have received the following from R. F. Holtermann, who attended the Michigan Convention, the report of which began on page 302:

**FRIEND YORK:**—After reading the report of the Michigan State Convention, I felt as if I had just grounds for having some one up, or some Journal up, for defamation of character. It says:

"As to race of bees, Mr. Holtermann prefers a hybrid of about three-quarters Italian and one-quarter black."

It seems to me it was made pretty clear (very clear) that it was a cross between Italian and Carniolan. If that is the "black" blood referred to, it would be all right, but by "hybrid" we generally understand something else.

By the way, would it not be well to have all bee-keepers and the publishers of bee-literature (who can watch and control the matter)

make a firm resolve not to call a cross between the common black and Italian a hybrid any longer! We have been using this term knowing better, and a person not a bee-keeper, reading our literature, must be perplexed, and then amused, at our use of the term.

Bees have consumed an unusual amount of stores in the cellars, no doubt owing to high and changeable temperature. I lost 9 colonies out of 338, and I starved since putting out.

I consider outside winterers have the best of us this year. But, of course, the winter was exceptional. R. F. HOLTERMANN.

Brantford, Ont., April 6.



## Miscellaneous News & Items

**Death of Hon. J. M. Hambaugh.**—Since the last number went to press, we have received notice from Mr. G. F. Merriam, of California, saying that Hon. J. M. Hambaugh, a late Director of the National Bee-Keepers' Association, died the afternoon of April 5, in Escondido, Calif., from a cancer on the neck. Three weeks before, Mr. Hambaugh went to a hospital in Los Angeles to have the cancer removed, but he was told that nothing could be done for him.

Mr. Hambaugh was one of the leading bee-keepers of Illinois for many years before going to California. He, with Jas. A. Stone, installed the aparian exhibit of this State at the Columbian Exposition, in 1903.

Very soon after the Chicago World's Fair Mr. Hambaugh moved to Southern California, where he has continued his reputation as a bee-keeper. His loss will be keenly felt. His going seems like a personal loss to us, and will be so to many who knew him best.

We will soon publish a biographical sketch of Mr. Hambaugh.

**National Convention of 1906.**—We have received the following from Mr. C. P. Dadant, the President of the National Bee-Keepers' Association :

MR. EDITOR:—I see that some of our friends are getting impatient to hear of the next place of meeting and date of the National Convention. Let them not think that the Executive Committee have been asleep. There was never a time when so much correspondence was required. The Texas folks had the promise of the meeting at San Antonio for two years, or at least they were given encouragement three years ago, and the meeting was set for Texas for 1905. The appearance of yellow fever in the South made it advisable to change it to Chicago. The members of the committee felt that the Texans were entitled to it this year, if they could secure railroad rates. On the other hand, there was a strong sentiment in favor of St. Paul and the G. A. R. The Texas folks have at last secured the rates, and the only thing to fix is the date of the meeting, which will be put as late as possible, so that another yellow fever epidemic in New Orleans need not make any difference since it is always stopped at the opening of cool weather. Just as soon as the date is set it will be announced.

As to meeting every season with the G. A. R., if the National wishes it thus hereafter, they can have it. But I fear many times the G. A. R. comes too early for our busy honey crops. The bee-keeper usually wants to harvest his crop before he attends the convention. The Executive Committee would exceed their authority if they were to dictate such a course. The convention has power to settle it if it so chooses.

C. P. DADANT, President.  
Hamilton, Ill., April 6.

**New Edition of "Forty Years."**—We have just issued a new cloth-bound edition of Dr. C. C. Miller's book—"Forty Years Among the Bees." There has been added to this edition an "Appendix," which consists of comments on the previous edition, and experiences that the past three years have developed, and also Dr. Miller's latest photograph, taken expressly for this book. It is the best likeness we ever saw of the Doctor.

The "Appendix" (with the Doctor's picture) is also printed in a separate form, so that all who have the first edition can send for it (10 cents) and put it in the volume they have already. Thus they will have as complete a volume as the new one just issued. The price of the new edition remains the same as the former one, which is \$1.00, postpaid; or with the weekly American Bee Journal one year—both for \$1.80 (instead of \$1.75 as heretofore).

Every bee-keeper should have this book. It describes in detail the experiences and results of nearly 45 years of successful bee-keeping. The story is told in Dr. Miller's original and very entertaining manner. The first few pages give an account of his boyhood days, his early strug-

gles to get an education, and then follows the rest of the book devoted exclusively to telling in detail just how he manages to produce large crops of honey. Over 100 pictures in the book were taken by Dr. Miller himself. They help wonderfully to make the reading matter plainer. If you haven't a copy of this book, better send us \$1.00 for it at once; or forward \$1.80, and we will credit your subscription to the American Bee Journal for one year and mail you the book.

**An Unfortunate, But Determined, Californian is Delos Wood, of Soldiers' Home.** He wrote us as follows on March 16 :

Having lost by the mountain fire last fall all I had of this world's goods—house and contents, barn and hay, bees and fixtures, in all amounting to nearly \$3000—I decided to quit business and live at the National Home for disabled volunteer soldiers. I lost over 50 colonies of bees and many extra hives, etc.

Spring is now here, and with the merry hum of the bees the old fever has struck me, and I have taken up the work again and expect to be in the business on a larger scale than ever in one of the mountain canyons near the Soldiers' Home, in Los Angeles Co., Calif., and I must have the American Bee Journal.

DELOS WOOD.

Surely, Mr. Wood has lots of determination when after all his misfortunes he will re-enter the "bee-business on a larger scale than ever." We wish him every success, and trust that he may soon recover from his heavy fire losses.

As an indication of Mr. Wood's "never-give-upness," he has sent us the following poem, the author of which seems to be unknown :

### Never Give Up

"Never give up" in a cause that is just,  
But labor with power and will.  
"Never give up" be your motto and trust,  
And your aims you'll surely fulfill.

"Never give up"—it's a meaning that's true;  
It's a power, tho' silent, that's dear.  
"Never give up"—it's plain to your view,  
In the end it will give you good cheer.

"Never give up" to trouble and care  
You may meet in the pathway of life;  
"Never give up" to the gloom of despair,  
But conquer its sorrow and strife.

"Never give up" in the efforts of right,  
Whatever your calling may be.  
"Never give up," you'll win in the fight,  
And your mind will be happy and free.

**Only the "Square Deal" Pays.**—One of the most successful queen-breeders in the United States says this :

Orders are coming in fast now. I booked 100 untested Italian queens for a former customer to-day, to be used in building up an out-aplary. I have furnished him many queens, all for his own use, during the last 4 years. Repeated orders tell the tale. When a man gets what he wants he knows where to get the same again; but if he gets beat, he wants no more of that medicine.

**An Appreciation** comes to us from Wm. H. K. Eagerty, of Kansas, in these words :

You are doing your part to make bee-keeping a success. Your Journal is as regular as clock-work. You deserve great praise for getting the American Bee Journal up in such fine shape.

**Honey as a Health-Food.**—This is a 16-page honey-pamphlet intended to help increase the demand for honey. The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last part is devoted to "Honey-Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey, the more honey they will buy.

Prices, prepaid—Sample copy for a two-cent stamp; 50 copies for 70 cts.; 100 for \$1.25; 250 for \$2.25; 500 for \$4.00; or 1,000 for \$7.50. Your business card printed *free* at the bottom of front page on all orders for 100 or more copies. Send all orders to the office of the American Bee Journal.

**Amerikanische Bienenzucht,** by Hans Buschbauer, is a bee-keeper's hand-book of 138 pages, which is just what our German friends will want. It is fully illustrated, and neatly bound in cloth. Price, postpaid, \$1.00; or with the American Bee Journal one year—both for \$1.75. Address all orders to this office.



## Contributed & Special Articles

### Nucleus Method of Queen-Rearing

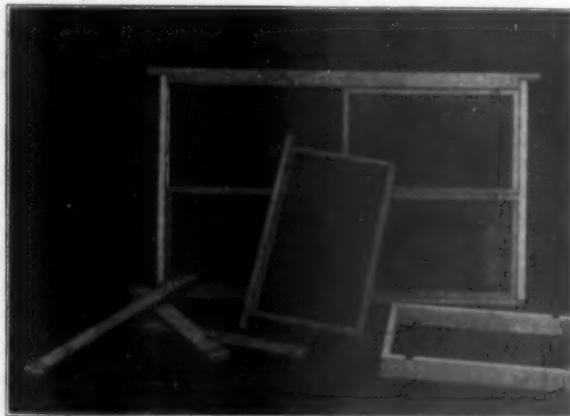
BY F. GREINER.

**T**HIS branch of apiculture is one of the most interesting and, to me, most fascinating branches of our pursuit.

This is due in a great measure to the progress we have made in late years. Our forefathers were not ignorant of certain fundamental facts in regard to rearing queens, and applied this knowledge in their way; but not until American bee-masters took up this work, giving it their undivided attention, that methods were brought out which put everything previously known "in the shade."

The discovery that larvae could be transferred from one cell to another without harm to the developing insect was made by a German bee-master during the first years of my bee-keeping—about 30 years ago, if I remember rightly. It seemed to be a frequently occurring trouble that colonies refused to rear queens or start cells over given brood, and the advice given at that time in order to outwit these obstinate bees was to remove the larvae from the cells which they had started over their own brood, and substitute selected larvae from the desired type. It was found that this plan worked every time, and it is my opinion that this procedure will produce queens second to none.

Priming artificial cells with royal food does very well,



and if we do our work well we can usually succeed in getting the large majority of cells accepted. After the bees have once accepted a cell and supplied it abundantly with suitable food, according to their fashion, we can then do almost anything with it, and the bees will continue taking care of the inmate.

It stands to reason that the larva which we transfer will find more suitable surroundings in that queen-cell from which a royal larva has just been removed than in an artificial cell clumsily prepared by man's fingers. A larva placed in the warm bed of another will probably not notice the change, and receive not the slightest setback, but go right on and develop into a most perfect queen-bee.

I am well aware that the above is as yet largely theory. It needs careful testing whether or not thus produced queen-bees are any better for it. But it is quite certain that we cannot make a mistake if we let our bees accept a lot of stocked-up cells first, allow them to take care of the young larva for about 24 hours, then remove them and replace with just-hatched larvae from our best mother-bee. I look upon this method with so much favor that I have adopted it as the best plan. In all our operations with bees we must remain as close to nature as possible and consistent with the object to be accomplished.

If it were possible and practical to obtain our queen-cells from our best colonies, having them start the cells naturally and under the swarming impulse when the honey-season is on, that would be the ideal, and we will do well to make the very best use of all queen-cells that are so built in

our apiaries by our breeding colonies; but the quantity is too limited, and we do not often have them at the time when we need them most; consequently we are depending upon other more prolific methods, and the one outlined is a good one.

As to the matter of mating the queens, the baby-nucleus plan is all the go at present—at any rate among the queen-breeders. I have tested the Pratt nucleus boxes and have been successful with them, still I do not keep them in use. I fear they do not take care of themselves as larger and more populous nucleus colonies would do. With a larger nucleus colony feeding is seldom necessary. This is an item in favor of it, although the larger the more expensive.

A few years ago I made a lot of small frames of which 4 fill a regular brood-frame. I can use them thus in my regular hives, or I can use them separately in a small hive by attaching a top-bar to each. The way I do use them is by means of a sort of long-ideal hive holding 18 or 20 of them. By means of division-boards, close-fitting, I can divide the long-ideal hive into 4 compartments, a small entrance to each. When I first made this small frame, my idea was to use them in a small hive during the summer, and unite a number of them, putting 4 frames into one large brood-frame.

In practice this uniting and putting on large frames did not work to my satisfaction. It was unpleasant work, and took too much time. I conceived the idea that perhaps I might winter these nuclei on the small frame and thus have nucleus hives ready and stocked up early in the season and at any time. This worked well. A few days before the queen-cells are ready I slip in the division-boards, letting the queen go where she will. On the third day cells are given to the queenless parts; when these queens are laying they are removed, and if we desire to increase the number of our nuclei the hive is moved to another place and an empty one like the one moved away is put in its place. Each compartment is fitted out with honey-combs, and at least one comb of brood and bees. The flying bees or field-bees from the moved hive make pretty fair nuclei and we are thus doubling the number to start with. With these hives it is an easy matter to have what nuclei we want to use.

The uniting in the fall is also easy. In fact, the whole matter becomes so easy that it almost runs itself. The feeding can be done by giving combs heavy with honey instead of liquid feed. There is no trouble in getting any of the regular colonies to clean up such combs and fill them with honey during the early part of the season.

It goes without saying that these hives do not winter on their summer stands, but have to be taken into the cellar; but 4 of the nuclei, when they are united in the fall by removing the division-boards, make a large enough body of bees to guarantee the wintering indoors.

I have used some empty shipping boxes obtainable at the grocery store and made these long-ideal hives from them, but I don't like this sort of economy. It is more agreeable to have all hives uniform—nucleus hives as well as standard-size hives and winter-cases—and I become more and more disgusted with those I have in use. I believe we fare better by using new lumber in hive-making all the way through, if it does cost a little more.

The illustration shows the little nucleus frame full of comb with top-bar attached; also one frame without top-bar and 3 of the top-bars lying by the side. The little staples, bent over, are the means to hold frame and bar together; the reader will observe the notches cut out of the frame which admit slipping the staples in place. The frame is reversible, i. e., the top-bar may be attached to either side.

The illustration also shows that 4 nucleus frames may be slipped into a regular brood-frame. This feature is of value, as by doing so we may have these frames filled with honey, pollen and brood by any of our regular colonies, thus giving us an opportunity to help and build up the nuclei when it seems necessary. However, I want to say that a 4 or 5 frame nucleus of this kind is in pretty good shape to hold its own all through the season except winter.

The credit for the staple-device clasping frame and top-bar together belongs to Mr. Pratt, of baby-nucleus fame.

Naples, N. Y.

### 9—Dadant Methods of Honey-Production

BY C. P. DADANT.

THE first crops of honey that we produced with two or more apiaries were of honey in small glass boxes or in the Adair section-box. This Adair box was the forerunner of the "pound" section. The sections held about 3 pounds of honey each and were clamped together in the shape

of a box, with a glass at each end. As this was before the invention of comb foundation, or rather before the practical use and manufacture of it, we had to fasten small pieces of comb to each section to secure straight combs, and even with that help the combs were not always straight. In addition to that difficulty, we had a number of inferior seasons in succession, and many of our cases would become stale before they were filled. It was then that we tried a hanging frame in a shallow super for extracting. The difference in results confirmed our previous views on the great difference between allowing the bees to build all the combs, and furnishing to them sets of combs already built from previous years.

We tried the extracting super-frames side by side with the comb-honey sections; we tried also sections in wide frames side by side with extracting frames, and at once also recognized the difference in results between allowing the bees to produce honey in large receptacles, and compelling them to build in small sections. When we gave our bees full super-frames in half-story supers, and placed by the side of these a number of one-pound sections, all equally supplied with starters, we ascertained that the bees would almost invariably begin work in the large frames in preference to the sections, even when the sections were placed nearer to the brood-



combs and in the center of the brood-nest. This fact is explained by Oliver Foster better than by any one else:

"When we take in consideration that the object on the part of the bees, in storing up honey in summer, is to have it accessible for winter consumption, and that, in winter, the bees collect in a round ball, as nearly as possible, in a semi-torpid state—with but little if any motion, except that gradual moving of bees from the center to the surface and from the surface to the center of this ball—we may imagine how unwelcome it is to them to be obliged to divide their stores between 4 separate apartments, each of which is 4 inches square and 12 inches long, with no communication between these apartments."

The above quotation makes it plain, and in very few words, why bees dislike to build in small receptacles, and why the producers of "chunk" honey produce such large crops. Add to this the great gain secured by extracting the honey and returning the combs to the bees to be filled again, and you will readily understand how it was that, after trying a few extracting supers, with the hive-body in close communication with the supers, we no longer cared for any other method of production.

We had used a honey-board over the frames. We discarded it. We tried a skeleton honey-board, to break joints; we discarded it, also. An oilcloth laid over the brood-combs and placed over the super during the harvest was all the cover we used under the hive-cap. Later, we adopted the straw mat, which no one uses but ourselves, as far as we can learn,

and which yet deserves strong commendation, for it is good to keep the heat in the brood-chamber in winter, and to keep the heat of the sun off in the summer. We keep these mats on the hive at all times with the best of results. They are an old European implement, which gardeners use for all sorts of purposes, and of many sizes, for covering hotbeds, sheltering early plants in cool nights, and even as a shelter to valuable "espaliers"—fruit-trees trained to a wall or a trellis—that form an adornment to many a country or cottage garden.

The super, with its frames hanging right over the brood-frames, and filled with combs from the previous season, gives our bees such ample room, and of so free an access, that they go up into it without hesitancy; and if we carefully calculate the probability of a large crop, and provide them with enough empty comb in good time—the other requirements being also provided for—we need not be afraid of many natural swarms. It is only when the bees desire to change their queen, owing to old age or failing prolificness, or when a strange queen has been unwillingly accepted by them, that we may expect an occasional swarm. Besides, if we keep our surplus combs sufficiently numerous to provide for storing-room, we secure immense results.

The assertion made by some, that bees are compelled to produce beeswax, whether they will or not, and that this wax is lost when combs are provided already built, is entirely erroneous. The bees do produce a little wax naturally during a heavy flow, but the quantity thus produced is barely sufficient to repair damaged cells that have been run through the extractor; to lengthen the combs, and seal them as the honey ripens. On the other hand, when no comb is furnished, or not enough to keep the bees at work, they must, in many instances, remain idle until wax enough is produced by digestion to build the storing-combs.

As an instance of what may be achieved during a very heavy flow, I will mention the results secured at one time: We had been extracting the honey in an apiary of 87 colonies. It took 3 days to go through this apiary. The flow of honey was very heavy, the honey harvested being quite dense and needed less evaporating than usual. At the end of the third day—as I knew that the bees had been working very busily—I examined the first hives from which we had extracted the honey 3 days before, and found all the supers with honey in every cell—the supers probably half filled. Such quick results I have never seen since. It was in 1884. I do not believe that half as much honey could have been secured if the bees had had to build the combs.

Hamilton, Ill.

## Time a Queenless Swarm Will Remain Clustered

BY F. L. DAY.

FROM my own experience I had formerly supposed that a swarm of bees would not remain clustered more than 10 or 15 minutes without its queen, or at least a queen of some kind. I had also understood, from the reading of bee-literature, that such was the case. But last season I had a notable exception to this rule. I had a very fine swarm of Golden Italians, which had been the upper story of one of my 4 colonies treated by the Alexander plan. This colony remained 6 days after being placed on a new stand. The colony from which it was taken had itself sent out a swarm on the same day that I removed the upper story. This upper story was removed on the tenth day from the first preparation of the colony, and not on the thirty-ninth day, as Mr. Alexander mistakenly states in his scathing criticism of the report of my test of his plan of increase. If Gleanings ever finds room to publish the reply which I sent in 7 months ago, I hope to be set right before the readers of that paper.

But to return to the swarm question; I got them back in their own hive when they had swarmed 6 days after being separated from the mother colony. They had reared a fine queen from the cells started before separating, and now settled down to business, soon becoming one of my most promising colonies. I gave them one super for extracting, and soon added a second. The queen soon had the 10 frames in the brood-chamber packed full of brood. It was of no avail to give an abundance of room as a preventive of swarming. The first swarm had come out June 7. By July 1 they had a great number of queen-cells, which I cut out. I also removed cells again on July 11, 18, 24 and 30. This was quite often (for a non-swarming plan)—five times in one month, after a colony had been divided once, besides.

On July 31 the swarm came out. While I had been

cutting queen-cells all through July, the queen had kept the 10 frames packed full of brood, and the colony had become very populous.

I have a few small trees or shrubs among my hives, not for shade, but to help the bees mark the location of their hives. They are also convenient for swarms to cluster on. One of these trees gets most of the swarms. Under this tree I had a box to set a hive on when shaking a swarm off. The swarm in question had a clipped queen which I caught as she came out of the hive. The swarm settled on the favorite tree, in three clusters, several feet apart, each cluster being a fair-sized one. Although I had the queen all right, I wished to get the swarm back in its hive. I shook the tree and smoked the bees, but they were extremely obstinate. Having tried to swarm for a month, they did not like to be balked in their purpose. As I shook them off the tree, time and again, a portion of them kept falling on the box below. I used the smoker on these, but only a few would take wing. The most of the bees crawled down the sides of the box on the grass or small bushes in the rear. After a time I managed to get a fair portion of them in the air and saw many of them going into their own hive. Then I went to the house for a short time, and, on coming back, I took a brief survey of the yard and went into the shop to work.

About an hour afterward I heard a sound of swarming. I found bees going into the hive which had swarmed. I went out to the tree where the swarm had clustered, and found a good part of the swarm still in the box, where they had been for fully  $1\frac{1}{2}$  hours. On smoking them again they went back to their hive at once.

Detroit City, Minn.



## Convention Proceedings

### Report of the Northern Michigan Convention

BY IRA D. BARTLETT.

The Northern Michigan Bee-Keepers' Association met at Kalkaska, April 4 and 5, 1906.

Pres. Geo. H. Kirkpatrick called the convention to order at 2 p. m., on April 4.

The Secretary's report and also the Treasurer's report were read and approved.

Mr. Hutchinson moved that we pay \$1.00 and join the National Association in a body. Motion was withdrawn.

Mr. Irish—Shall we be entitled to the rebate if we do not all pay in \$1.00, but only those who do not belong?

Mr. Beacham made a motion and it was seconded, that we who do not belong to the National pay \$1.00 for National and local. Carried.

#### MANAGEMENT OF OUT-APRIARIES.

E. D. Townsend, of Remus, then read a paper on the management of out-yards. Mr. Townsend said that one person with one good, efficient helper, could manage any number of yards. He feeds in the fall about 25 pounds to each colony if needed; puts his bees in clamps, and leaves them until early spring; supplies plenty of combs and keeps down increase; advises a system so simple that you can advise your assistant, and he can understand and go on with the work without your presence. Ten days after the flow stops he extracts. Each yard is supplied with a complete outfit, saying that it does not pay to move implements from one yard to another.

Mr. Kitson—How many stories high does Mr. Townsend tier up?

Mr. Townsend—One to five stories.

Mr. Beacham says that he would have to extract twice a year, as he could not distinguish the strong-flavored from the light-mild honey.

Mr. Townsend meant that he extracted after each flow.

Elmer Hutchinson asked what success he had with bee-escapes.

Mr. Townsend replied that he did not use escapes with extracted honey.

Mr. Hutchinson then read a letter from a dealer using alcohol barrels, advising the use of them, but to dry them thoroughly.

Mr. Beacham said, "I do not want any barrels."

Mr. Kirkpatrick asked Mr. Townsend how he kept the

queen out of the surplus receptacle. He applies all receptacles on top instead of raising up supers and putting under. Mr. Chapman always uses excluders to keep the queen below, but raises brood from brood-nest to super, and destroys queen-cells in time. Mr. Smith says he always uses excluders. Mr. Beacham uses queen-excluders, but does not raise any brood-combs out of brood-nest.

Mr. Kitson—Does Mr. Townsend clip his queens?

Mr. Townsend—No.

Mr. Coveyou asked if it would be advisable to put an excluder under the brood-nest.

"Very few have tried it."

#### THE NATIONAL ASSOCIATION AND NORTHERN MICHIGAN.

The Secretary then read a letter from N. E. France, who asked that this question be discussed: "How can the National Association be of more value to Northern Michigan members?" and asked that a reply be sent him.

Mr. Townsend—Reduce the transportation rate on bees.

Mr. Beacham—The rate on honey is too high.

Mr. Bartlett—First class rate on beeswax.

Mr. Beacham said that he considered the National report as highly instructive, and that the Secretary deserves great credit for his efforts. Mr. Coveyou expressed the same opinion.

Mr. Beacham asked the chair to appoint a committee of three to draft resolutions to be sent to the National. Messrs. Hutchinson, Townsend and Chapman were appointed.

Mr. Coveyou—How can the Northern Michigan Bee-Keepers' Association be of more value to its members? If we could get together we might buy supplies cheaper.

#### MARKETING HONEY.

Mr. Chapman said, "Give away samples to prospective customers, and you will be well repaid"—at least that has been his experience, as he received many nice orders later on after doing so.

Mr. Smith said, "Take a 60-pound can of honey with a honey-gate, and step into a kitchen and say, 'I want to give you a sample of honey,' and draw out a little and let them taste it;" and his experience is that you will sell them a quantity right there, providing your honey is the best.

Mr. Kirkpatrick said, "Do not sell to the consumer at the same price you would to the wholesale trade." He sells only in \$1.00 or more quantities. Mr. Kitson sells in quart jars. Mr. Beacham sells in quart jars at 35 cents. Mrs. Morrow says that her trade demands small packages. Mr. Smith thinks it pays to pick up cans previously delivered with honey, as it pays the expense of the trip.

Mr. Root said, "Try to educate your customers to use granulated honey, and to know that it is pure;" he also said that he had samples which he would be glad to give to those wanting them.

Mr. Root has used paper oyster pails very satisfactorily as a package to sell honey in.

At the evening session Pres. Kirkpatrick, in the absence of Rev. Gray, showed some lantern slides of the A. I. Root Co., after which he showed some of his own making. The light of the machine not being very bright, the effect was not the best. He concluded by showing a slide of live bees, which was very amusing and interesting.

#### EXTRACTED HONEY AND ITS QUALITY.

Pres. Kirkpatrick then read a paper entitled, "Extracted Honey and Its Quality." He said, "Place colonies in a location sheltered from wind, and in a good white honey locality. He prefers the shallow hives, and has over 200 of them at present. He tiers up when the hives are full of bees and brood, and raises the frames from brood-nest to super above to get strong colonies. He says his bees cap more readily, and he gets more uniform quality of honey. He can keep different varieties of honey separate more easily with the shallow super. He believes that the red raspberry yields the very best honey, and says that the honey not capped should never be sold to the consumer or put on market for sale to such. He urged that quality makes the difference between success and failure of a bee-keeper; that is, produce only the very best, and your success is assured.

A Member—If I had not heard Mr. Kirkpatrick read that paper, I should have said, "That was Mr. Chapman's paper."

Mr. Beacham also advocates the shallow frames for the production of A No. 1 extracted honey, as he gets better-ripened honey.

Mr. Chapman has had frames and sections drawn out, filled, and capped in 7 days, and believes that if the colony is

very strong the honey will be ripened in one-half the time that is required by a weak colony.

Mr. Kirkpatrick leaves his extracting combs on as long as possible before extracting.

#### SPRING MANAGEMENT OF BEES.

Mr. Hilton—First note the condition of the bees—see if they have a queen and stores. To feed for stimulating you get the best results by feeding from the outside. Use the Simplicity feeder. We should be very careful in the spreading of brood. A little honey fed early saves much early brood, as the bees can reach it without having to go to the outside combs to get it.

Mr. Kirkpatrick does not feed unless the bees need the honey.

Mr. Chapman would not feed very early, but would advise feeding when the bees are breeding very fast in May.

Pres. Kirkpatrick then appointed Messrs. Hubert Root, W. Z. Hutchinson, and Geo. E. Hilton, to act as judges on the honey displayed, and to award the prizes.

(Continued next week.)



## Canadian Beedom

Conducted by MORLEY PETTIT, Villa Nova, Ont.

#### Changes in Apiarian Freight-Rates

The Transportation Committee appointed by the Ontario Bee-Keepers' Association to meet the Dominion Railway Commission, with reference to better rates on bee-keepers' goods, have some improvement to report, but not much. The committee consists of R. F. Holtermann, J. D. Evans and Wm. Couse. The following are the changes made:

	Less than Carload.	Carload
Beeswax changed from.....	1st	
To.....	2d	4th
Honey in pails with wooden covers added, at same ratings as in kegs or barrels.....	2d	4th
Bees in hives changed from.....	3—1	3d
	minimum 20,000 lbs.	
To.....	3—1	2d
	minimum 12,000 lbs.	
Comb (sections, etc.) wood not now rated boxes or bundles, if knocked down flat or folded flat in bundles, crates or boxes....	3d	5th

#### Who Should Keep Bees?

C. O. Jones, of Bedford, Quebec, goes into this question quite fully in the Family Herald and Weekly Star. His answer is, "None are so well adapted to it by the circumstances of their surroundings as the average farmer." He says further:

The bees will require intelligent care and attention at a time when the farmer is busy with his other duties, but from personal experience I know that they will not interfere unduly with the other farm duties. For several years I ran a large farm and conducted an apiary from 150 to 200 colonies, and I always considered the apiary by far the most profitable department of the farm. We usually had a dairy of about 20 cows, and quite often the proceeds would exceed the income from the dairy. When you consider the amount of capital invested, and the difference in the labor required, you can not but arrive at the conclusion that bees are a profitable adjunct to the farm.

I do not mean that any one should ever try to keep bees without a sufficient knowledge of them to care for them intelligently. Intelligent attention they must have.

The labor required to carry on an apiary of say 100 or so colonies is not great. I would put it at one man's time for three months in good seasons. If the season is poor, less labor will be required, and much of this work may be done at a season when the farmer is not busy at his ordinary duties. During the swarming season and the honey-flow constant attention is imperative, but this does not last in this locality longer than 6 weeks. There is no branch of agriculture yielding larger returns for the outlay of capital and labor than bee-keeping.

All of what Mr. Jones says is true; but some points must be clearly borne in mind.

1st. The great majority of those who get bees on the farm, through the lack of attention, knowledge or time,

make a miserable failure of keeping bees. They spend more money on hives and bees than would have been needed to supply the family with honey.

2d. "The swarming season and honey-flow," when "constant attention is imperative," begins in haying and ends in harvest! All good farmers know how much time they have for bees at that time, especially in the heat of the day when swarming takes place.

3d. In justice to his neighbor bee-keepers no man has the moral right to have neglected hives of bees about his place, on account of disease. Every one who owns bees should be able to detect foul brood, and should inspect his own bees at least once every summer. I know Mr. Jones is not advocating neglected bees, but the point is worth mentioning.

Now, how best can the farmer keep bees? If he has a son or daughter he can spare from the regular farm work, let them spend a season with a successful bee-keeper in order to get a little experience, then start them in bees at home.

Right along this line "E. G. H." says in the Farmers' Advocate:

While the natural home of the bee is in the country, the science of apiculture is so entirely different from that of agriculture that the two can not be followed to any great extent conjointly without one or both suffering from neglect, more or less—usually more.

#### Box-Hive Bees Like a Chipmunk

Bees in a box-hive are like a chipmunk in a stone fence—you know where he is all right, but that's about as far as your knowledge or control of him goes.—E. G. H., in Farmers' Advocate.

#### Tireless Industry

The honey-bees are a brilliant illustration of the blessings bestowed by labor. It is their ability and willingness to work which make them an example to every one.—American Cultivator.

Yes, but like most other farmers, they have an easy time all winter.

#### Mild Winter—Good Prospects for Honey

It has been a very mild winter here, and I think the bees are coming through in fine shape. The prospect is good for honey if we only get the right kind of weather.

I wish the American Bee Journal all the success it deserves for the help it gives to bee-keepers.

Clarkburg, Ont., March 7.

E. KNOLL.

#### Truth About Honey

Owing to the oft-repeated misstatements about adulterated honey and manufactured comb honey, in the newspapers, the Honey-Producers' League of Chicago, Ill., have published the following truths. The idea is an excellent one, and both dealers and bee-keepers should unite in an attempt to correct this prevalent and erroneous idea.—Toronto Mail and Empire.

This is followed by a statement proving falsity of the comb-honey canard.

#### White Honey in Dirty Boxes—Handling Bees in Cold Weather—Ripening Honey in Open Vessels

1. It is poor economy to have clean, white honey stored in old, dirty boxes.

2. Handling or disturbing bees in cold weather is injurious and should be avoided.

3. Honey will ripen itself if left exposed to the open air in almost any kind of open vessels.—Mail and Empire.

Nos. 1 and 2 are good, but No. 3 is directly contrary to experience in our climate, where the air is usually more or less damp. Pity such a statement should go out to the public. The surface of a tank of honey exposed for any number of days or weeks becomes thin like water from the moisture it absorbs from the surrounding air. Not only that, but the delicate aroma, and even parts of the flavor, passes off and is lost by long exposure.

The hive is the place, and only right place, for honey to be ripened. Then it should be sealed up in the shipping packages as soon as extracted.



## Our Sister Bee-Keepers

Conducted by EMMA M. WILSON, Marengo, Ill.

### Use Honey Instead of Molasses

One of the most important questions that confront the woman who is looking after the best interests of her family is what shall be put upon the table three times a day. The food must be wholesome, and it must appeal to the palate. In these latter days of canned goods and preservatives one has a more or less uneasy feeling lest, in studying variety, there may be put upon the table that which shall sap the health, if not the life, of the dear ones of the family. Safety seems to lie in the direction of preparing the bill of fare from articles that may be confidently counted on as free from adulteration. Flour, salt, pepper, etc., we have heretofore used without any thought that there may be "death in the pot." But now we may no longer feel safe as to one of the articles in daily use.

Molasses is one of the first things used as a spread by the child as soon as it is weaned, and it is used in the same way by the grandmother in her dotage. Many families use large quantities of molasses in gingerbread, cookies, etc. It seems one of the indispensables. Alas, that it is no longer on the safe list. L. E. Walter, M. S., says in the April number of *What to Eat*:

The use of formaldehyde is so generally associated with milk that we would hardly expect to find it present in molasses, but it is nevertheless a fact that some of the finest grades of molasses put up by Southern firms during the past season contained very liberal quantities of formaldehyde. We know personally of three firms using formalin in their canned syrups and molasses, and have also heard reports of others making use of it. We recently examined two samples of molasses put up during the past summer. The syrup was contained in one-pound cans, and labeled as being thoroughly sterilized. Each of these samples was found to contain about 15 times as much of the preservative (formalin) as was actually necessary to insure the keeping qualities of the goods without any sterilization whatever.

What are we to do? Fortunately the answer is easy: Honey can be used to take the place of molasses in every case. All the preservative needed for honey has been furnished by the bees themselves, so there is no temptation to put in it formaldehyde or other baneful substance. As a spread it has no equal, and in cookery it can take the place of molasses to great advantage. The increased expense is not to be considered in a matter so nearly concerning the health of the household.

The reform can not begin any too soon. Let the watchword be "Honey; no more molasses."

The proper place for the reform to begin is in the homes of the bee-keeping sisters.

How is it in your home, sister? Is it honey or molasses in cookies? It's honey at our house—has been for years—and now the use of molasses for any purpose will be tabooed.

What do you all say?

### Trouble Among the Bees

Mr. Jos. Hulbert gives your readers an interesting and rather exciting account of a time when, in his novitiate days, a simple and not very unusual mischance to a bee-keeper when manipulating hives caused "a lively time" to poor "Piggy" that chanced to live in a sty near at hand. A somewhat similar occurrence happened in my own apiary 3 or 4 years ago. A very heavy crate containing sealed frames of honey ready for removal from one of my hives was to come off, and the strong arms of him who calls me wife were kindly offered to lift it for me. I did the smoking (too much, I now fear), and, as I thought, got everything in readiness for the operation. But I had not prepared for brace-comb, which, in this case, had firmly fastened about 4 of the frames in a lower surplus chamber to those in the one being removed. My husband's powerful arms were equal to the task of lifting, but he said, "My word, this is heavy. You've got some honey here," when bump, bump, down fell first one frame, then another (the others I saved), and such a lively time as followed may be imagined. It

was not "Piggy," it was "Hubby," for he had only his slippers on, and, moreover, was clad in thin, wide summer trousers, up which the bees crawled, stinging as they went! Again, readers, I ask you not to laugh. It was no laughing matter!

A moral there is to this little story. Husbands, don't go to help your bee-loving wives with feet clad only in slippers, or legs wrapt loosely in thin garments!—M. S., in the British Bee Journal.

### Wants Bees and Honey

DEAR MISS WILSON:—Will you please send a price-list of your honey and bees. I have never had bees and know very little as to price or kind. I have written to 3 or 4 different ones—all men. I would like to hear from you as soon as convenient.

MRS. D. L. CANTINE.

We have no price-list. We do not sell bees, our business being solely the production of comb honey, and at present we have no honey, as our crop was all sold early last fall. By "we," I mean Dr. Miller and myself. I have no apiary of my own, but for years have been Dr. Miller's assistant. He rears queens merely for his own use, and only occasionally sells one as a special favor.—[We would say further that there are a number of advertisements offering bees, queens and honey in this Journal almost every week. Why not patronize them?—EDITOR.]



## Mr. Hasty's Afterthoughts

The "Old Reliable" as seen through New and Unreliable Glasses. By E. E. Hasty, Sta. B. Rural, Toledo, Ohio.

### Don't Use Propolized Smoker-Fuel Late in Fall

I think fuel bedaubed with propolis or wax should not be used late in the fall. From all the region around it attracts bees whose honesty is too frail to bear temptation. Robbing is bad enough in the fall without helping it on any. Bee-hunters, you know, oft secure their first bees by burning comb. Page 209.

### Beeswax—Origin, Composition, Etc.

Eight scales secreted at a time when bees are secreting wax. In my head I had it six. Thanks for the correction. Wouldn't it be more correct to say "excretions" rather than excrement of the young bee that renders the new comb dark? More comprehensive. Cell too evenly darkened throughout to be wholly the latter. So the three waxes in beeswax are not equal, or even sub-equal, in amount. Two big ingredients and one slight ingredient. And the slight ingredient melts easily. But 60 degrees Fahrenheit would keep it melted all the time except in quite cold weather—and it would be an oil instead of a wax. Wonder if the 60 isn't an error, else meant for Centigrade or something. Of course 96 percent of solid waxes *might* soak up 4 percent of oil, if that is really it—but we want to know, you know. But as usual Mr. Getaz gives us a meaty article—don't waste his space at merely parading words under the impression that it's literature we want. Page 211.

### Value of Old Combs

C. P. Dadant is right in the main about old combs being good indefinitely. Apparently bees in winter pull out the cocoons and residual matters and nibble them up for food—and that's the main reason why bees winter so much better on old combs. But an occasional colony (I know not why) will plaster on more and more wax upon the cells in the lower part of the combs until they are nearly solid—not only unfit to rear young bees in, but unfit for holding anything. Page 212.

### "Plum" Potatoes in Germany

Sad that Germany, which leads the entire world in the amount of potatoes raised, should make its city laborers eat those which are of the size of plums, and pay 45 cents a bushel for them. That's what Prof. Cook finds over there. 'Spects it's largely the zeal of our seedsmen in producing new varieties that has saved us from the like. Think of this

if you are tempted to grumble at the endless lists of new and amazing potatoes—immediate result annoying, but net result excellent. We might easily have been eating potatoes of the size of plums and paying more for them than we do now. I can remember back to the time when they better deserved the name of "Munster plums" than at present. Howsoever, it would be better to eat Munster plums, and have them excellent in quality, than to wrestle down the big, long Merinos and the mammoth, round Pinkeyes that used to afflict us. Page 231.

#### Dadant Divisible Brood-Frame

Many thanks to C. P. Dadant for his picture of a sectional frame that will take apart and put together again. I have long wished to experiment with a hive taking double length frames, and the difficulty of putting two frames together halted me in my planning. Page 232.

#### A Queen-Rearing Kink

So a half-built comb of Italian brood will be pretty sure to have *some* queen-cells built on it, even in an alien hive of hybrids, if placed in the center. Then at the proper time the cells not Italian can be destroyed. Good kink to keep in memory. Page 236.

#### Where to Locate an Apiary

A. C. Allen thinks it's less windy on northern slopes (in warm weather) than on southern slopes. Guess he's right. His deduction is, Don't plant an apiary with a decided tilt to the south. But as winter winds come from the northwest and northeast, you should winter bees in the cellar if you choose a steep northern slope. Page 238.

#### A Long Honey-Comb

That continuous comb, nice and straight for 9½ feet, entitles E. S. Armstrong to wear a small feather in his crown—if he's an "honest Injun." Page 238.

#### Iron Rust in Honey Kills Bees

John W. Pharr's item on page 238 should not be forgotten. Iron rust in honey (enough to make it look decidedly rusty) kills bees right straight along. Still, in this case, it *might* possibly be that it was a mixture of salts of tin with the iron rust that did the greater share of the mischief.



## Southern & Beedom \*

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

#### "Brood-Periods" and Arrangement

A good many of "we'uns," as Mr. Hasty is wont to call "us," hardly stop to think about such things as a regular order in the brood-nest, the meaning of "brood-periods," and a score of other such things. If we would, there would no doubt be a larger number of *better* bee-keepers. To possess some knowledge on subjects of this kind seems, in the mind of many—quite too many of us—to be entirely unnecessary or useless, in making our returns of the apiary larger than they may be, in obtaining greater profits for the time and money invested. If, however, one possesses such knowledge, and knows how to apply it, he will soon outstrip his fellow men who must stumble along in the dark.

Every time I open a hive and look over the combs with brood I can not keep from noticing the arrangement of the brood circles, the number of brood-periods, etc. I can also understand better now *why* the practise of spreading brood, if not done with proper understanding, will be of little or no gain. Mr. Stachelhausen's article below will tell it.

#### Order and Development of the Brood

Very little attention has been given as yet to the fact that the queen lays the eggs in the cells in a certain order, and that this order is of importance to the welfare and full

development of the colony, some bee-keepers going even so far as to assert that no order at all exists in this respect, and that the queen lays eggs arbitrarily in the hive. Everybody can prove by inspection that this is a great error. As the age of the eggs and of the brood can be recognized, we can easily see in every brood-nest what the queen's path was. In the center of the globular cluster, on the warmest place, egg-laying is commenced in early spring. Around the first egg laid by the queen 6 more are deposited in the adjoining cells. In this way, going around in circles, the queen lays eggs in cells next to those in which she had laid a short time before, till she reaches the limit of cells which are warmed up by the brood-bees.

Now the queen goes to the neighboring comb in the same space, and, commencing in the center again, lays in the same way in a patch of cells probably a little smaller than that in the first comb; then she goes back to the first comb and lays around the older brood a new circle of eggs. She commences now to lay in the cells on the other side of the first comb, which will be the center comb of the brood-nest. If in this comb, and in the next one eggs are laid, the queen will go back to the other space again, will add new circles, and will probably use the second comb from the center one.

In this way the queen moves from one comb to the other, always laying a new circle of eggs around the older brood, so that the brood-nest will have a globular form, in which the brood of different ages are arranged like so many shells.

A worker needs 21 days to develop from the egg to the adult form, and then it gnaws out of the cell. If we inspect a brood-nest 22 days after egg-laying has commenced, we shall see on the center comb the oldest capped brood, and some bees gnawing out; around the capped brood the oldest larvae just ready to be capped over, then younger larvae, and, outside in a wide circle, eggs. On the next comb we shall find the same order, but in the center the oldest brood is missing, and on the extreme outside comb probably only a small patch of eggs may be seen.

As the cells after 3 weeks are becoming empty, and the queen can commence egg-laying in the center again, we call this a "brood-period." The fact that the queen is sure to lay the eggs during the second and all other brood-periods only in those cells from which young bees have gnawed out, is sufficient to force her to lay the eggs orderly. If she deposited the eggs here and there, as some think she does, she would be forced to follow the same path in the second brood-period that she took in the first.

This egg-laying order in circles and in a globular form is inherited by the queen. Some think it can be explained by the influence of the heat in such a way that the queen always lays eggs in only the warmest cells. Heat has, no doubt, a great influence in all actions of the bees; but if we hive a swarm on empty combs we shall observe that this brood-order is kept more regular than in any other case; and at that time the temperature is high enough so that the queen can lay eggs anywhere in the hive, and sometimes even so high that the bees are forced to ventilate the hive.

#### ALTERATION OF THE BROOD ORDER.

This order of the brood, as described above, is not always possible. There are different influences which may alter the appearance of the brood-nest:

1. The center of the brood-nest is, if regular, in the center of the middle comb; but this point may be altered by the heat of the sun warming up one side of the hive more than the other one, or by a neighboring colony if 2 colonies are set close together. Then the center of the brood-nest is nearer this heated side of the hive; the brood-nest has a more semi-globular shape, and the eggs are deposited in semi-circles.

2. If we have a good honey-flow in early spring, when the brood-nest is yet small, this honey may be a hindrance to the regular enlargement of the brood-nest; but generally this honey is removed by the bees to give room for the brood. Nevertheless, during a very good honey-flow the honey sometimes keeps the brood-nest in a limited space, as I have observed many times here in Texas; but hereby some other influences are working in the same direction.

Of more influence is the pollen, if gathered in larger quantities than needed for the brood. The bees do not remove the pollen to other cells as they do the honey, and so the pollen disturbs the order of the brood-nest everywhere. If this pollen is used up while the queen is laying eggs nearby, she will generally lay eggs in these now empty cells, too, and afterward we shall see some open brood among the capped. If the pollen in these cells is consumed when the

surrounding brood is capped already, these cells will remain empty till the queen comes back to this place for laying eggs. The greatest disturbance to the brood-nest is caused by the pollen in the outside circles.

Just opposite the outer brood-combs we shall observe a patch of pollen as large, and of the same form as the brood-patch on the opposite comb. If the brood-nest be enlarged, and this pollen be not consumed, the queen will be forced to lay eggs in the outer side of this comb before she can lay on the inner side now occupied by pollen. Ten days afterward we may find capped brood on the outer side of this comb, and young brood on the inner side. If this comb is reversed now, the regular order is generally secured again.

3. We know that the number of eggs which the queen lays daily is gradually getting larger from early spring till swarming time; consequently the brood-nest of every following brood-period must be larger than the former one; nevertheless this brood nest is commenced in the center of the former one, and should find room in it. This contradiction needs a solution. If the queen commences to lay in the center, she will, in her circling path, soon meet capped brood; then she will move on the same comb, over the brood, to the surface of the brood-nest till she will meet empty cells in which she will lay eggs. We call a brood-nest in this condition a "brood-nest of two systems," because in the center comb, for instance, we shall find brood of the same age not together in one place, as in the regular brood-nest, but in two separate circles. The bees avoid this condition as much as possible, as the queen lays a larger number of eggs in a wide circle on the outer surface of the globular brood-nest before she commences to lay in the center again. While the cells would be empty in 21 days, the queen does not commence egg-laying in the center before 24 days.

4. Another disturbance of the brood-nest is caused by too narrow or too shallow frames. If the brood reaches the top and bottom (or the ends) of the frame in the third brood-period, the circles can be maintained no more, and the eggs are laid by the queen on the sides (or on the bottom) only; while with two shallow frames the brood of this age is entirely wanting on top and bottom of this comb. This squeezing out of the brood takes place on the center comb at first, and, in extreme cases, on the adjoining combs, and on every brood-comb at last.

5. The greatest of all disturbances is when the bee-keeper changes frames from one hive to the other, inserts empty comb between brood-combs, or changes the place of them without any attention to this natural brood order.

No doubt the bee has a wonderful power of accommodation; and as soon as this disorder is created the bees try to restore order again in this mixed-up business by keeping some cells empty till the neighboring brood has gnawed out. In the meantime the queen is wandering around, hunting for a larger patch of empty cells, thus losing time and eggs. At best the bee-keeper has enlarged the brood-nest, but no more cells are occupied by brood than in a regular brood-nest; so he has gained nothing in fact; but the large brood-nest needs more bees and more fuel, to be kept warm.

Sometimes the queen may find a comb with capped brood, where she expects empty cells. This may disturb her so much that the brood-nest on the other side of this comb will be entirely neglected. One thing is sure—in these disturbed brood-nests the queen will not lay as many eggs as she would in a natural brood-nest. The bee-keepers who manipulate their brood-frames in early spring are those who doubt that an average queen can lay more than 2000 eggs daily, while, in fact, every queen worth keeping at all should be able to lay 4000 eggs daily during the height of the season, in a natural brood-nest, if the conditions are favorable.

In the last brood-period before swarming time it is of less disadvantage to disturb the order of the brood, and now is the time to manipulate the brood-combs if necessary. I will give a few practical hints:

If the queen is in the center, and a new brood-period is beginning, empty combs can be placed next to the center comb on both sides, without disturbing the order.

If the queen is at the end of the brood-period, on the surface of the brood-nest, empty combs should be added between the last brood-comb and the pollen-comb. Generally empty combs must be added just next to the comb where the queen is in the center to lay eggs. If another brood-comb be added, it should be done in this way, so that brood of the same age shall be opposite the old and the new frames.

Cibolo, Tex.



## Doctor Miller's Question-Box

Send questions either to the office of the American Bee Journal, or to Dr. C. C. MILLER, Marengo, Ill.

Dr. Miller does not answer Questions by mail.

### Bees Superseding Queens in Early Spring

What makes bees supersede their queens at this time of the year? I examined my bees and found one queen in front of the entrance. There were no other bees robbing them.

WEST VIRGINIA.

ANSWER.—The same thing makes bees supersede a queen in spring that makes them supersede one at any other time, namely, the fact that she has become unfit for good service. Generally that happens when she has lived two years or more; sometimes not till she is 4 years old; but sometimes it occurs when the queen has lived a very short time. Indeed, in some cases it can not be said that the queen has become unfit for good service; she is so poor that she never was good; and in such a case she may be superseded when she is only a few weeks, or even a few days old. Years ago I had a queen so worthless that she never laid more than one egg that I could discover, and that was in a queen-cell with the evident intent of superseding.

The great bulk of superseding is done at or near the close of the honey harvest, when one might naturally expect the queen to be worn out by the arduous task of providing so many thousands of eggs for the season. Only occasionally does superseding take place in the spring; and then it behoves the bee-keeper to be on the lookout, for the great probability is that a queen reared so very early in the season will be worthless.

### T-Supers and Sections

How are the T-tins supported in your super? What are the dimensions of your sections? I use a tin support in the supers, but they are stationary. I also use a plain section and fences. I think I like your super and sections best. It does away with the expense of the fence, and saves labor.

MICHIGAN.

ANSWER.—I use the sections that are most in use: 2 bee-way sections  $4\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{1}{8}$ . The supports for T-tins in most of my supers are pieces of sheet-iron  $1\frac{1}{4} \times 1$  inch. They are fastened by two wire nails driven within  $\frac{1}{4}$  inch or less of the inside edge of the super. That, you will see, allows a projection of  $\frac{1}{8}$  of an inch to support the T-tins. A few of the latest have wire staples for supports. The staples are of the square form, about an inch wide, are driven in about a quarter of an inch from the inner edge of the super (of course they are driven into the bottom of the super). They are driven in deep enough so that when bent over at right angles there will be a support of  $\frac{1}{4}$  inch. I'm not sure which are better, but perhaps the staples.

I think you will like the T-tins loose better than fastened. It is much easier with the loose tins to fill sections into the super and to take them out. It is ten times as easy to clean the loose tins than the fast ones. The loose ones can be cleaned by the hundred by dumping them in a kettle of boiling lye, and the fast ones must be scraped.

### Transferring Bees

I have a colony of bees in a box  $19 \times 19 \times 36$  inches. I would like to transfer them into a hive. "A B C of Bee-Culture," page 353, says that fruit-bloom is the best time. If I should happen to smear and kill the queen when transferring, will the bees rear another? What do you consider best for me to do?

WISCONSIN.

ANSWER.—If the queen should be killed, the bees will have plenty of young brood from which to rear another. But there isn't very much danger of your killing her.

If the colony would swarm at the usual time of swarming, it would be better for you to wait for that, hiving the swarm in a movable-frame hive, and then transferring 3 weeks later. But in a box holding more than 4 bushels there is no certainty that they will swarm at all. If the box is in such shape that you can cut it down to about one-fourth of its size without disturbing any of the combs that contain brood, that may be your best course. Otherwise transfer in fruit-bloom.

### Thin Bottom-Boards—Hive-Cover for Comb Honey

1. Are thin bottom-boards ( $\frac{3}{16}$  inch) considered as good as thick ones ( $\frac{1}{2}$ ) for wintering bees outdoors?

2. What cover do you consider best for the production of comb honey, where a part of the hives must be in the sun? I would like a description of the ones you use.

PENNSYLVANIA.

ANSWERS.—1. So far as the bees are concerned, yes. Of course there's more danger of breakage when so thin.

2. Almost any cover will do in the sun, if some kind of protection

is over them. Any sort of boards or shingles will do for this, or you may put on top an armful of long grass weighted down with two or three sticks of firewood. Neater and more convenient is a cover with an air-space; that is, a double cover.

My oldest covers are plain board covers, just one thickness of  $\frac{1}{8}$  lumber. The next are made of two layers of  $\frac{1}{8}$  stuff, the grain of the upper layer running lengthwise, and the grain of the lower cross-wise. A dead-air space of  $\frac{1}{8}$  of an inch is between the two layers. This dead-air space makes it cooler in the hot sun, and warmer when

the day is cold. The cover is covered with tin, painted white. The latest covers I have are made the same way, only covered with zinc, unpainted. They would be still better painted white when in the sun. These are satisfactory covers, only too expensive—about 30 cents each. I have two or three covers covered with Neponset paper, and painted, that have been in use several years, and seem to last well. If I were not so crowded all the time, I think I should make a few covers after Arthur C. Miller's plan; covered with cloth pasted like trunk-covers, and painted. It might be worth while, also, to try rubberoid or some form of roofing.

## Reports and Experiences

### Good Year for Bees.

Last year was a very good one for bees in this part of the country, but we do not have much of anything for them to gather honey from except white clover; and in the fall, white asters. They do not store any surplus honey in the fall, but they do gather enough for winter stores. A. Cutlip. Frametown, W. V.

### Swarming Too Much.

My bees are just filling their hives with nice honey, but are swarming too much. It keeps me busy making hives for them. R. L. McColley. Sorrento, Fla., March 20.

### Keeps Bees and Poultry.

The Bee Journal is an old friend of mine. I have 12 colonies of bees, and I think they will winter all right. I have only small farm of 15 acres, and keep poultry. I have it very easy and nice, as my wife and I are the only ones in the family. I love bees very much. I had about 1,000 pounds of honey last year. Wm. Schultz. Zeeland, Mich., March 6.

### Bees Short of Stores—National Report.

Many bees in this section are short of stores, and will receive but little attention from their owners, as most of the bee-keepers are farmers who keep a few bees to produce their honey at home. There was but very little honey gathered after July 15, 1905, and by the beginning of winter the bees had eaten much of their stores and went into winter very short of feed. This has been an extra warm winter, and the bees have eaten more than usual. On February 21 my bees were flying like they do in spring. I opened the lightest hives and found some of

them just on the verge of starvation, with the hives full of bees and brood-rearing nicely started. I fed them by putting combs of honey in the hives, that I had saved from last summer for that purpose, thanks to Dr. Miller's advice.

Our fine weather and promise of an early spring changed yesterday morning when it began to snow, and this evening there is somewhere between 8 and 12 inches of snow on the ground. So we may have some winter yet, although it has not turned very cold yet, but it is still snowing.

I have just received my copy of the Annual Report of the National Bee-Keepers' Association, and am reading it with much interest. I wish we could have it in a more substantial binding, for it deserves a place in every bee-keepers' library. John Stotts. Dallas, Iowa, March 15.

### Wintered Well—Fair Prospects.

The year 1905 was not a very good one for bees in the central part of Nebraska. I started with 11 colonies in the spring, increased to 18, lost two prime swarms, and got somewhat over 300 pounds of section-honey.

Bees so far have wintered fine on the summer stands, packed in oat-chaff. March so far has been a stormy month, with plenty of snow and rain. The prospects are fair, and the farmers around me intend putting in largely of alfalfa seed this spring. Sweet clover is spreading, but not fast enough to suit me. Henry Hansen. Ashton, Neb., March 26.

### Wintered Nicely—Poor Season in 1905.

I put 51 colonies into the cellar last fall, and they are all alive yet, except 1. I am waiting for a nice day to put them out. All bees wintered nicely here this winter, even those that were left outdoors, that had honey enough. I am running for comb honey, and got some 10-frame hives last spring, but I think I made a mistake. I will try them one more summer, and if I do not get better results I will make them all smaller. The 8-frame I think is the hive for comb-honey in this locality. I had 29 colonies last spring and got 1,200 pounds of comb honey. I let them swarm once, and then cut out all

the queen-cells but one 6 days after they swarmed. Last year was a bad one for bees here. A. H. Timmerman. Prior Lake, Minn., March 28.

### Bees Wintering Well.

I am wintering 18 colonies of bees, all from what I shipped into this country last year. All are doing well so far. Some are in the cellar, some in chaff hives, and some on the summer stands. I sold what honey I had last fall at 30 cents per pound.

I. M. Beatty. Lewistown, Mont., March 12.

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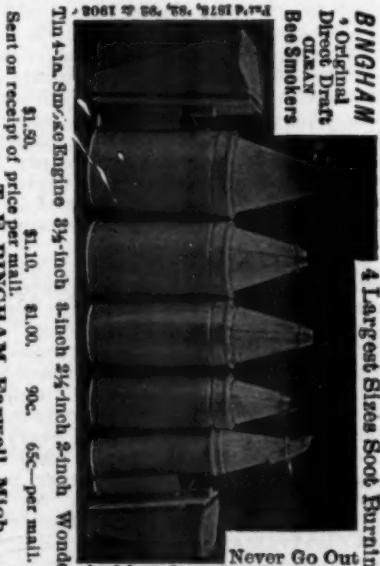
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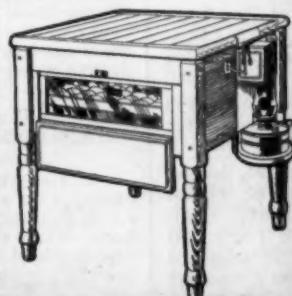
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### CONVENTION NOTICE.

**Western Illinois**—The semi-annual meeting of the Western Illinois Bee-Keepers' Association will be held in the County Court Room, in Galesburg, on Wednesday, May 16, commencing at 9 a.m. and lasting all day. Messrs. C. P. Dadant and J. Q. Smith have promised to be present and contribute to the success of the meeting. Our meetings have been good, but we hope to make this one better. Galesburg has good train-service, and all bee-keepers in this part of the State should not fail to come. Come, and bring your wives with you. E. D. Woods, Sec.

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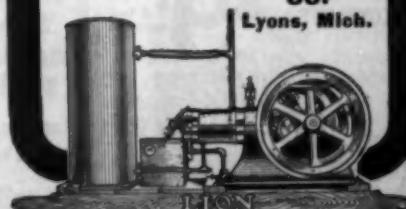
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To reduce my stock I will sell No. 1 White Polished Sections at \$3.90; No. 2, \$3.40—all sizes; plain, 25c less per 1000. Best White Pine Dovetail Hives, 8-frame, 1½-story, \$1.30; 10-frame, \$1.45. Great reduction in Smokers, Foundation, and all Apianian Supplies. 24-lb. Shipping Cases, very nice, 13c; Quart Berry Baskets, \$2.75 per 1000. Send for free Catalog.

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A 15-tooth, 2-section, Low Down Harrow—the strongest built machine of its kind made, complete, for **\$9.45**. A steel rim, 2-section, Land Roller, made

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COMPLETE  
LOW DOWN HARROW

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BEES, QUEENS, AND NUCLEI**



Choice home-bred and imported stock. All Queens reared in full colonies.

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One Untested Queen	..... \$1.10
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1-comb nucleus (no queen)	1.50
2 " " " "	2.60
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Untested in May; all others ready now from last season's rearing. Safe arrival guaranteed.

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Caucasian Bees are very gentle. They are easy to handle and are, therefore, suited to beginners, timid bee-keepers and to those who keep bees in town. If you want to try this race, or if you want to improve the stock of your Italian Bees, write to

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We manufacture standard dovetailed beehives and supplies, cheaper than you ever bought before. Our Queens and Bees stand at the head in quality. Untested, 75c each; \$4.25 for 6, or \$8 per doz. Tested, \$1.25 each; \$12 per doz. Select Tested, \$1.50. Special prices to dealers in large lots on application. State Agents for Dittmer's Foundation. Catalog free.

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**For Queens** Send to **JOHN W. PHARR**  
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He will furnish at the same prices as last year: Tested, \$1; Untested, 75c; 5 for \$3.25; 10 for \$6; 15 for \$8.25; 25 for \$12.50; 100 for \$45. He breeds Goldens, Carniolans, and 3-Band Italians. Also 1, 2, and 3 frame Nuclei and full colonies. Prices given on application. Pharr pays the freight, and guarantees satisfaction on all Queens. To do justice and judgment is more acceptable with the Lord than sacrifice.—(Prov. 3:21.) 5Atf

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**LONG-TONGUES AND GOLDEN QUEENS**  
Select Untested, \$1; 6 for \$5; 12 for \$9. Tested, \$1.50; 6 for \$8. Best Breeders, \$3.50. Safe arrival guaranteed. **W. A. RAILS,**  
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Best 3-band Italian—1 Untested Queen, 75c; 6 for \$4; 12 for \$7.25. One 2-frame Nucleus with Queen, \$2.25; 10 in one bunch, \$17.50.

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Line bred from individual types for color, gentleness and honey-producing. A scientific queen-rearing plant; standard prices and fair dealing. Our "Pure Gold" strain of Italians are unsurpassed for gentleness and fertility. We offer best facilities for prompt shipment to the Middle West. Send for catalog. **ROSE LAWN APIARIES,**  
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**LEWIS' BEEWARE**

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Beeswax wanted—28c cash, 30c when taking bee-supplies in exchange.

Extracted Honey For Sale. Prices on application. Sample, 10 cents.

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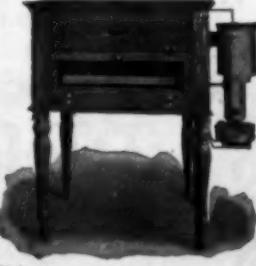
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We carry a complete stock of "Mandy Lee" Incubators and Brooders. Don't fail to investigate these machines. The more you know about incubation, the more you will like the "Mandy Lee" Incubator. The "Mandy Lee Brooder" is a complete old hen, all but the "cluck." Our free incubator catalog describes them.

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Send for our 1906 Free Illustrated Catalog. Good Goods, Low Prices and Prompt Shipments are what you get if you send your orders to—

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By a simple but effective mechanical arrangement and a new application of nature's laws the "CONTINUOUS" HATCHER makes it possible to keep up a continuous hatching of chicks from one machine—a FRESH HATCH EVERY DAY. Removing chicks from machine and replacing them with fresh eggs does not interfere with or retard process of incubation. This is possible with no other incubator. One

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45A4f J. G. Goodner, of this State, writes me that he "prefers to pay \$25.00 for a Rietsche Press rather than do without it."—A. G.

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Passengers east from Buffalo to Fort Wayne, Findlay, Fostoria, Cleveland, Erie, Buffalo, New York City, Boston, and all points east, will consult their interests and find advantage in selecting the Nickel Plate Road east from Chicago. Three through trains are run daily, with through day coaches to New York City, and modern Pullman sleeping-cars to destination. Rates always the lowest, and no excess fares are charged on any train, for any part of the journey. Modern dining-car service, with individual club meals, ranging in price from 35 cents to one dollar; also meals a la carte. Ask for tickets via the Nickel Plate Road. Chicago depot, La Salle and Van Buren Sts., the only station in Chicago on the Elevated Loop. Chicago City Ticket Office, 111 Adams St. Detailed information may be secured by addressing John Y. Calahan, General Agent, 113 Adams St., room 298, Chicago.

1—12A6t

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IN 60-POUND CANS

We have a good supply of **Pure Alfalfa HONEY** in 60-pound cans that we can ship by return freight at these prices: 2 cans, boxed, at 8 $\frac{1}{2}$  cents a pound; 4 or more cans at one time, 8 cents a pound—all f.o.b. Chicago. Cash with order. Sample, by mail, 8 in stamps, to cover package and postage.

Address,

**YORK HONEY AND BEE SUPPLY CO.**

141-143 Ontario St., CHICAGO, ILL.

## WANTED MEN TO LEARN BEE-KEEPING

We can take live young men who really want to become expert bee-keepers, give them employment in our apiaries, and teach them as much as they can learn in one season, in applying state age, height, weight, and previous occupation. None but those of good moral habits need apply. **MORLEY PETTIT,**  
13A4t **VILLA NOVA, ONTARIO, CANADA.**

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Lowest Prices

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OF ALL KINDS  
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The W. T. Falconer Mfg. Co.  
JAMESTOWN, N. Y.

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Honey and  
& Beeswax

CHICAGO, April 7.—The best grades of comb honey are scarce and sell at 15c per pound; off lots are of uncertain value, ranging in price from 10@14c. Extracted meets with fair sale at 6@7c for white, and 6@8c for amber, with off flavors about 1c per pound less. Beeswax sells at 30c on arrival.

R. A. BURNETT & CO.

TOLEDO, Feb. 19.—The market for comb honey has been better for the past two weeks than at any time during the past season. Prices are firm on account of the scarcity. We are getting 15@16c for fancy white clover; 14@15c for No. 1, and 13@14c for amber. Buckwheat, 13c. Extracted honey is in good demand at following prices: White clover in barrels brings 6@7c; amber, 5@5@6c; in cans every grade from 10@14c higher. Beeswax is firm and in good demand at 28 and 30c.

The above are our selling prices, not what we pay.

GRIGGS BROS.

INDIANAPOLIS, March 24.—Fancy white clover comb brings 16c; No. 1, 14c; demand exceeds the supply; fancy white western comb brings 14@15c; amber grades in poor demand at 12c. Best grade of extracted honey brings 8@9c in 60-pound cans; amber, 6c. Good average beeswax sells here for \$33 per 100 pounds.

WALTER S. PODUER.

PHILADELPHIA, April 10.—The season is now well advanced. There is very little call for comb honey. Almost all the choice grades have been cleaned up. The prices range a little firmer for what small quantities of the fancy grades are still held over. The other grades of comb honey are still a drag on the market. We quote: Fancy white comb, 16@17c; amber, 12@13c; dark, 10@11c. Extracted, fancy white, 7@8c; amber, 6@7c. Beeswax, 28c.

We are producers of honey and do not handle on commission.

W. A. SELSER.

NEW YORK, March 19.—Demand for comb honey is fair, especially for the better grades, and fancy white is selling at from 14@15c; No. 1, 13c; light amber, 11@12c; no more demand for dark comb honey. Extracted is in good demand, mostly California, at unchanged prices. Beeswax is firm at from 29@31c, according to quality.

HILDRETH & SIELENKEN.

# Headquarters for Bee-Supplies

Complete Stock for 1906 now on hand.

## FREIGHT-RATES FROM CINCINNATI

are the LOWEST, ESPECIALLY  
for the SOUTH

as 'most all freight now goes through Cincinnati.

Prompt Service is what I practice.

You will

Satisfaction Guaranteed.

### SAVE MONEY BUYING FROM ME.

Catalog mailed free.  
Send for same.

AT Root's Factory Prices

Let me book your Order for **QUEENS** bred in separate apiaries, the **GOLDEN YELLOWS, CARNIOLANS, RED CLOVERS and CAUCASIANS.**

For prices, refer to my catalog, page 29.

**C. H. W. WEBER** CINCINNATI  
...OHIO...  
Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

CINCINNATI, April 4.—There is no material change in the honey market since our last report. The demand does not come up to expectations, which, in all probability, is due to the inclement weather of the past month. We continue to quote amber in barrels at 5@6c. Fancy white in crates of two 60-lb. cans at 6@8c. Choice yellow beeswax 30c. delivered here.

THE FRED W. MUTH CO.

DETROIT, Feb. 5.—Owing to the mild weather the demand for honey has not been as good as usual at this time of year. We are quoting strictly No. 1 white alfalfa comb honey at \$3.35 to \$3.75 per case of 24 sections; off grade and light amber at \$3 to \$3.30. White extracted alfalfa in 60-pound cans, 7@8c; light amber, 6@7c. Beeswax, 24c for clean yellow.

THE COLO. HONEY-PRODUCERS' ASSN.

KANSAS CITY, March 16.—The supply of comb honey is not very large. Demand is light, best 24 section white selling at 3.25 per case, amber at 25@30c per case less. Extracted, white, 6@7c per pound; amber, 6c. Beeswax, 25@30c. We look for an increased demand in the near future.

CINCINNATI, March 7.—The demand for comb honey is slow, prices obtained are the same. Stock on hand seems to be sufficient to supply the wants. Quote fancy white, 14@16c. Amber extracted in barrels, 5@6c; in cans, 6c more; fancy white clover in 60-lb. cans, 7@8c cents; Southern, equal to white clover in color, from 6@7c. Bright yellow beeswax, 30c.

C. H. W. WEBER.

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34Atf Please mention the Bee Journal.

## FOR SALE

20 cases of comb honey—mostly white clover, in non-drip cases. LOUIS WERNER,  
15ASt EDWARDSVILLE, ILL.

65c for 12 Names For names and P. O. of 12 farmers and 100-stamps taken—we will send for 2 yrs. the Farmer's Call—reg. sub. price 40c a year. F. C. is a weekly, 5 years old, 1,300 pages a year. Sample free.

FARMER'S CALL, Quincy, Ill.  
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## FANCY WHITE EXTRACTED HONEY

CRATES 2-60 LB. CANS; 8c  
TWO OR MORE CRATES; 7c  
LARGER LOTS, WRITE FOR SPECIAL PRICES. ALL  
F. O. B. CINCINNATI. CASH WITH ORDER. SAMPLES 10c.  
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No. 51 WALNUT STREET, CINCINNATI, OHIO.  
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# One Hundred Cents on the Dollar

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ESTABLISHED  
30 YEARS

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Received my Sections in fine shape, and am well pleased with them. They are the best Sections I ever put together.  
ARTHUR STAMPE. Paullina, Iowa.

I want to say that I consider your make of Sections the nearest perfect I have ever had. I have folded packages of 500 without breaking one, and I can not say that of others I have used.  
GEO. BROWN. Deerfield, Iowa.

During the last four years I have bought 10,000 Sections from three other firms. Before I had used yours for several years, but have decided after a thorough trial that yours are the best and most perfect Sections in every way that I have ever used.  
DAVID FOOTE. Riceville, Iowa.

I used your supplies exclusively for almost fourteen years, especially the Sections, and I don't want any other kind.  
C. H. HAKLAN. Mora, Minn.

I have received those Sections in good shape, and I am well pleased with same. They are all right in every way. I shall recommend your bee-supplies to other bee-keepers. I think you make better goods than any other firm in the world. Accept my thanks.  
GEO. B. McDANIELS. Grand View, Iowa.

### HIVES

We note that the Lewis Goods for the season of 1906 are finer than ever. Hives and Hive-parts are without any knots. In fact, they are so nice that we are very much surprised, as we supposed that as lumber gets scarcer and higher necessarily poorer grades of lumber would have to be used. We are receiving many compliments on the Lewis Goods we are shipping out.  
A. G. WOODMAN CO. Grand Rapids, Mich.

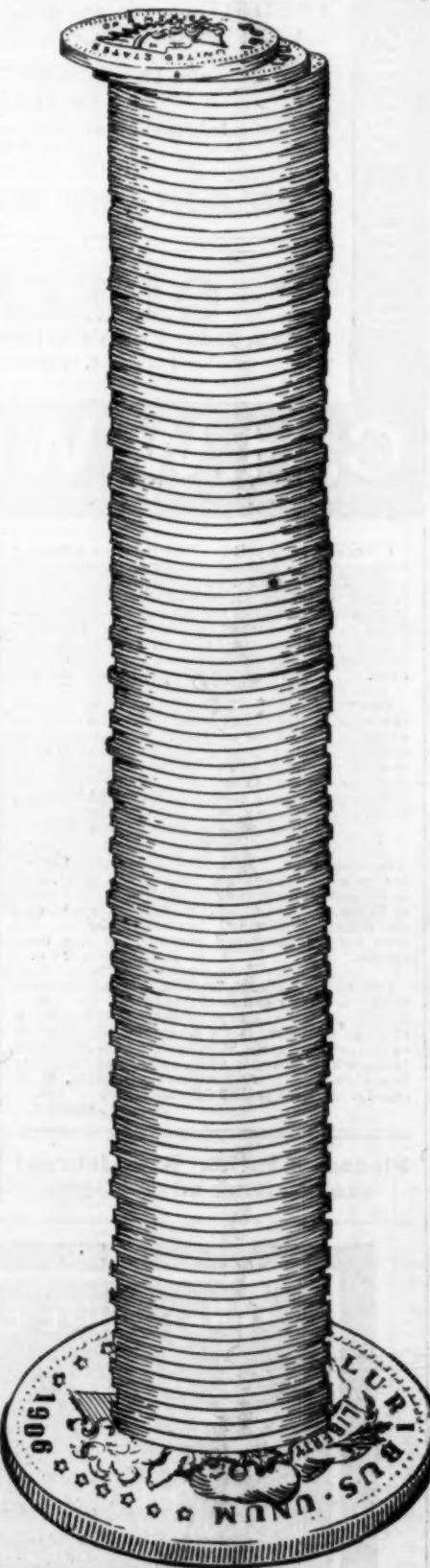
About two months ago I bought 25 of your 8-frame Dovetailed Hives, and I put these together without losing a single piece. I find these Hives to be better than any other I have ever used. Although I have a gas engine and good tools, I can buy your Hives cheaper and more accurately made.  
E. K. MEREDITH. Batavia, Ill.

Your Hives look as if they had been sandpapered after they are nailed up. I have just finished nailing up 40 2-story hives, and they are as nice as could be.  
L. B. SMITH. Rescue, Tex.

I received the 50 Bee-Hives, and I can say that they are the very nicest, finest and best Hives I have ever seen.  
TOPFIELD LEHMAN. Elgin, Iowa.

The Hives are a model of perfection both as to material and workmanship. It is a pleasure to have material to go together as yours does.  
E. W. LYLES. Charlotte, N. C.

I received the Hives I ordered in good condition. Same are fine hives. They look like better lumber than any I have bought before; also fit better than any Hives I have ever put together.  
HARRY WEST. Morrison, Ill.



ANNUAL OUTPUT—  
20 MILLION SECTIONS  
100,000 HIVES

### FRAMES

The Frames you sent me were duly received, and they are the best, finest and nicest Frames I have ever had.  
H. P. WILLSON. Bathgate, N. D.

Received my 100 Brood-Frames in fine shape, and I am well pleased with them. They are the best I have ever put together.  
D. S. HAAG. Rock City, Ill.

I find Frames, Fences, Covers, Hive-Bodies and Bottoms perfect, and made of the finest lumber I ever saw supplies made of.  
D. M. LAUDENSLAYER. Mackeyville, Pa.

### PROMPTNESS

I would like to thank you for your prompt way of doing business in such a season as this when every one is excited.  
E. W. COE. Aug., 1903, Clarence, Iowa.

I wish to acknowledge receipt of the goods ordered from you, and thank you for your promptness in sending them.  
CLAUDE L. MADISON. Alden, Ill.

### RESPONSIBILITY

Remembering how well you did with me over 22 years ago on some Hives I bought, I hope we may come together again on a small deal.  
LEOPOLD MOLLER. Fremont, Nebr.

I thank you for thirty years of friendly dealings.  
C. THEILMANN. Theilman, Minn.

Don't worry about us not handling your Goods. I have used and sold your goods for 15 years, and consider them the finest Bee-ware made.  
J. E. ENYART & SON. McFall, Mo.

I am well pleased with your way of doing business, and satisfied with all Goods received from your factory. Can say that they are much better than I can get any place else.  
J. F. NOLTE. Redfield, Iowa.

I received goods O. K. It is a pleasure to deal with a firm like yours.  
H. LUKE. Burlington, Wis.

### PACKING

We think your policy of packing Goods in first-class shape, and a specified number to the crate, is the winning card.  
THE CHAS. H. LILLY CO. Seattle, Wash.

I consider your freedom from mistakes quite wonderful, considering the number and variety of pieces in the various lines of goods you carry.  
W. C. GIBSON. National Home, Milwaukee, Wis.

LEWIS CO., WATERTOWN, WIS.